

12-3 Word Problem Practice**Surface Areas of Cylinders**

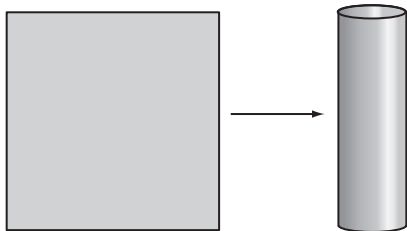
1. **DRUMS** A drum is shaped like a cylinder with a height of 5 inches and a radius of 7 inches. What is the surface area of the drum? Round your answer to the nearest hundredth.

2. **DRINKING GLASSES** A drinking glass is shaped like a cylinder with a height of 7 inches and a diameter of 3 inches.



What is the surface area of the drinking glass? Remember that the glass has an open top. Round your answer to the nearest hundredth.

3. **ORIGAMI** Hank takes a square sheet of paper and rolls it into a cylinder. The square is 10 inches by 10 inches.

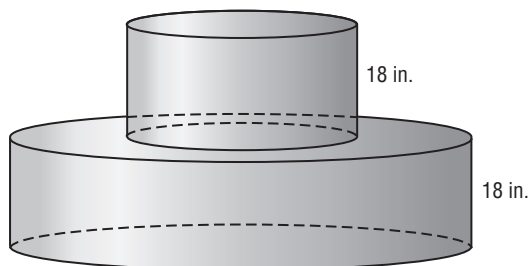


What are the dimensions of the cylinder and what is the lateral area of the cylinder? Round your answers to the nearest hundredth.

4. **EXHAUST PIPES** An exhaust pipe is shaped like a cylinder with a height of 50 inches and a radius of 2 inches. What is the lateral surface area of the exhaust pipe? Round your answer to the nearest hundredth.

TOWERS For Exercises 5 and 6, use the following information.

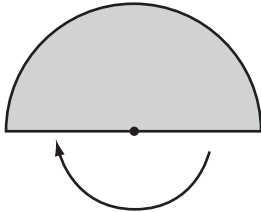
A circular tower is made by placing one cylinder on top of another. Both cylinders have a height of 18 inches. The top cylinder has a radius of 18 inches and the bottom cylinder has a radius of 36 inches.



5. What is the total surface area of the tower? Round your answer to the nearest hundredth.
6. Another tower is constructed by placing the original tower on top of another cylinder with a height of 18 inches and a radius of 54 inches. What is the total surface area of the new tower? Round your answer to the nearest hundredth.

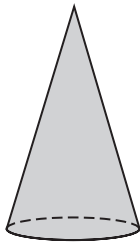
12-5 Word Problem Practice**Surface Areas of Cones**

1. **HALF CIRCLES** Charles cuts out a semicircle with a radius of 5 inches from a piece of paper. He then curls it into a cone by joining the two radii on the edge of the semicircle together.



What is the lateral surface area of the resulting cone? Round your answer to the nearest hundredth.

2. **CASTLES** A right circular cone with an altitude of 20 feet and a radius of 6 feet serves as the highest cap of a castle.



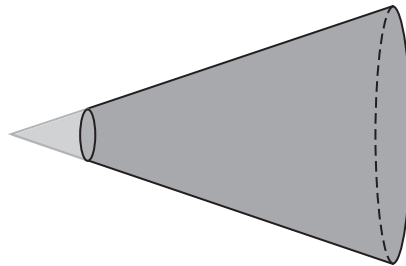
What is the lateral surface area of this cone? Round your answer to the nearest hundredth.

3. **PAINTING** Naomi is asked to paint a number of congruent cones. She is told that the radius of the cones is 6 inches and the altitude of the cones is 2 inches. What is the surface area of the cones? Round your answer to the nearest hundredth.

4. **SPRAY PAINT** A can of spray paint shoots out paint in a cone shaped mist. The lateral surface area of the cone is 65π square inches when the can is held 12 inches from a canvas. What is the area of the part of the canvas that gets sprayed with paint? Round your answer to the nearest hundredth.

MEGAPHONES For Exercises 5-7, use the following information.

A megaphone is formed by taking a cone with a radius of 20 centimeters and an altitude of 60 centimeters and cutting off the tip. The cut is made along a plane that is perpendicular to the axis of the cone and intersects the axis 12 centimeters from the vertex. Round your answer to the nearest hundredth.



5. What is the lateral surface area of the original cone?
6. What is the lateral surface area of the tip that is removed?
7. What is the lateral surface area of the megaphone?